

What is Claimed is:

1. In a system to control pathogens on a target element, the system including subjecting the target element to a disinfectant, the improvement comprising subjecting the target element to hypochlorous acid.

5 2. The system of Claim 1, wherein the hypochlorous acid is in the form of a hypochlorous acid stream of between about 4.3 and 7.0 pH.

3. The system of Claim 1, wherein the hypochlorous acid stream is formed by the following steps:

- 10 (a) combining an acid with a first carrier stream to form a first mixed stream;
- (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream;
- (c) combining the first mixed stream with the control stream having the chlorination agent to form the hypochlorous acid stream.

15 ^{9/16/02} 4. The system of Claim 1, wherein the target element is a poultry product.

5. In a system to control pathogens on a target element, the system including subjecting the target element to a disinfectant, the improvement comprising subjecting the target element to hypochlorous acid formed by the following steps:

- (a) combining an acid with a first carrier stream to form a first mixed stream;
- 20 (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream;
- (c) combining the first mixed stream with the control stream having the chlorination agent to form the hypochlorous acid stream.

6. The system of Claim 5, wherein the ratio of hypochlorous acid to hypochlorite in the hypochlorous acid stream is greater than one.

25 7. The system of Claim 5, wherein the hypochlorous acid stream is about 77 to about 99 percent hypochlorous acid.

8. ³ The system of Claim 5, wherein after combining the first mixed stream with the control stream, the pH of the hypochlorous acid stream is between approximately 4.3 and approximately 7.0.

30 9. ⁴ The system of Claim 5, wherein the first mixed stream is pressurized.

10. ⁵ The system of Claim 5, wherein the control stream with a chlorination agent is pressurized.

11. ⁶ The system of Claim ~~5~~, wherein the acid includes carbon dioxide.
12. ⁷ The system of Claim ~~5~~, wherein the first carrier stream is pressurized to at least about 50 psi.

13. In a system for controlling pathogens during the processing of animals into food including conveying an animal carcass through processing equipment, the improvement comprising subjecting the animal carcass to hypochlorous acid.

^{Sub A3} 14. The system of Claim 13, wherein the hypochlorous acid is in the form of a hypochlorous acid stream of between about 4.3 and 7.0 pH.

15. The system of Claim 13, wherein the hypochlorous acid stream is formed by the following steps:

- (a) combining an acid with a first carrier stream to form a first mixed stream;
- (b) introducing a chlorination agent into a control stream, the chlorination agent increasing the concentration of hypochlorous acid and hypochlorite of the control stream;
- (c) combining the first mixed stream with the control stream having the chlorination agent to form the hypochlorous acid stream.

16. The system of Claim 13, wherein the animal/animal carcass is conveyed through a pick/kill area, wherein the animal carcass is subjected to a hypochlorous acid stream in the pick/kill area.

17. The system of Claim 13, wherein the animal carcass is conveyed through an evisceration area, wherein the animal carcass is subjected to a hypochlorous acid stream in the evisceration area.

18. The system of Claim 13, wherein the animal carcass is conveyed through a chilling area, wherein the animal carcass is subjected to a hypochlorous acid stream in the chilling area.

¹² 19. The system of Claim ~~17~~, wherein the animal carcass also is conveyed through an evisceration area, wherein the animal carcass is subjected to a hypochlorous acid stream in the evisceration area.

¹³ ¹⁴ 20. The system of Claim ~~19~~, wherein the animal carcass also is conveyed through a chilling area, wherein the animal carcass is subjected to a hypochlorous acid stream in the chilling area.